

## REMARKS

### Introduction

In response to the final Office Action dated July 6, 2007, Applicants have amended claims 1 and 10. Claims 2 and 14 have been cancelled. Support for amended claim 1 is found in, for example, originally filed claims 2 and 14. Support for amended claim 10 is found in, for example, pg. 12, lines 1-2. Care has been taken to avoid the introduction of new matter. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

### Claim Rejection Under 35 U.S.C. § 112

Claim 10 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Office Action asserts that the specification limits the value “B” in the equation  $-80,000/B^2$  ps/nm to be the numeral value of the Gbps bit rate, which is unitless.

Applicants respectfully submit that the rejection is moot in view of amendment of claim 10, which recites, “...a bit rate in the unit of Gb/s.”

Accordingly, withdrawal of the rejection is respectfully solicited.

### Claim Rejections Under 35 U.S.C. § 103

Claims 1-4, 6, 7, 10, and 12 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Luo, in view of Blez et al. (*High speed ultralow chirp 1.55  $\mu$ m MBE grown GaInAs/AlGaInAs MQW DFB lasers*, Electronic Letters, Vol. 28, Issue 11, 21 May 1992, pp.

1040-1043 – hereinafter Blez). Amended claim 1 recites, in part, “...an effective area of at most  $50\ \mu\text{m}^2$  at the at least one wavelength.”

The combination of Luo and Blez fails to disclose or suggest, “...an effective area of at most  $50\ \mu\text{m}^2$  at the at least one wavelength,” as required by amended claim 1.

Claims 1 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,744,553 (hereinafter Islam) in view of Blez.

The combination of Islam and Blez fails to disclose or suggest, “... an effective area of at most  $50\ \mu\text{m}^2$  at the at least one wavelength, wherein the at least one signal corresponding to the at least one wavelength has an  $\alpha$  parameter of at least 1.0 at the output end of the corresponding directly modulated light source and the signal lightwave carries at least three signals having a wavelength different from one another and has a wavelength band of not less than 40 nm,” as required by amended claim 1.

Claims 1 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pre-Grant Publication No. 2002/0094179 (hereinafter Berkey) in view of Blez.

Amended claim 1 recites, in part, “...the signal lightwave carries at least three signals having a wavelength different from one another and has a wavelength band of not less than 40 nm.”

The combination of Berkey and Blez fails to disclose or suggest, “...the signal lightwave carries at least three signals having a wavelength different from one another and has a wavelength band of not less than 40 nm,” as required by amended claim 1.

Claims 1 and 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Pre-Grant Publication No. 2004/0028359 (hereinafter Tirloni) in view of Blez.

The combination of Tirloni and Blez fails to disclose or suggest, "...the signal lightwave carries at least three signals having a wavelength different from one another and has a wavelength band of not less than 40 nm," as required by amended claim 1.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Luo, in view of Blez, and further in view of Pre-Grant Publication No. 2004/0126074 to Bickham et al. Claim 5 depends from claim 1 and includes all of the features of that claim plus additional features, which are not taught or suggested by the cited references. Therefore, for at least these reasons, it is respectfully submitted that claim 5 also patentably distinguishes over the cited references.

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Luo in view of Blez, and further in view of Culverhouse. Claim 11 depends from claim 1 and includes all of the features of that claim plus additional features, which are not taught or suggested by the cited references. Therefore, for at least these reasons, it is respectfully submitted that claim 11 also patentably distinguishes over the cited references.

### **Conclusion**

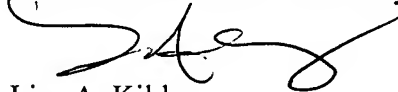
In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

**Application No.:** 10/820,794

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP



Lisa A. Kilday  
Registration No. 56,210

600 13<sup>th</sup> Street, N.W.  
Washington, DC 20005-3096  
Phone: 202.756.8000 BPC/LAK:lnm  
Facsimile: 202.756.8087  
**Date: October 9, 2007**

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